Observatory e-News

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November Observatory Events *At-A-Glance*

Nov. 1: FOTO's monthly meeting, 7:30 PM at the Observatory. Supper 6 PM at Panera's in the Hyde Park Plaza. See page 2.

Nov. 2: FOTOkids meeting, 7:30 at the Observatory. See page 2.

Nov. 3: Stonelick Star Party; Rain date Nov. 10. See page 5.

Nov. 13: Humanities at the Observatory. 7:30 PM. See page 3.

Nov. 20: FOTO planning meeting, 6 PM at Hyde Park Tavern & Grille on Erie Ave. See page 2.

Did You Know….

So far, Spirit has driven a total of 7.26 kilometers (4.51 miles) on Mars and has returned more than 102,000 images. Opportunity has driven 11.57 kilometers (7.19 miles) and has returned more than 94,000 images.

The Word from FOTO's President Bosse

Flash! Flash! Sputnik is 50!

I know this is last month's news, but it took the better part of October for it to really sink in for me. I remember seeing Sputnik, the satellite and the booster. That makes me old, I think. I don't really feel old and thinking about Sputnik actually makes me feel young. I was not even four when Sputnik flew. It is not only one of my first memories of interacting with the sky, it is one of my oldest memories, period.

Searching the skies for a tiny slow-moving light? Not like an aeroplane, but different. Slow steady movement across the dark sky, no blinking, no engines. The neighbors had gathered for the predicted passage and I can only presume that some information had been published in the newspaper or related on television (yes, there was television then). Once spotted, I was moderately unimpressed, unable to grasp the concept of something a hundred plus miles over my head, or the political ramifications. Everyone else sure made a ruckus about it though.

This is where my memory gets a little foggy. I can't be sure whether it was the same observation or not, but I do remember seeing the booster rocket (not having the foggiest idea what a booster was). I remember seeing this object not really blink, but slowly vary in its brightness as it passed from west to east, overhead. The booster was tumbling, changing its reflective attitude (I would learn, years later). That's odd, I thought, satellites don't usually do that! Having observed every satellite ever launched made me an expert at the age of "this many."

It is only now that I realize that my observation back then was only made possible by calculations performed by Paul Herget. Dr. Paul Herget of the Cincinnati Observatory. It's a small world. I had worked with Dr. Herget rather closely the last four years of his life and of my many conversations with Paul covering every conceivable topic (mostly computers, politics and money management); he never mentioned anything about Sputnik. He mentioned plenty about Explorer,… Vanguard,… the Atlas Missile,… Project Mercury… I don't think he liked the Russians very much.

So now I'm feeling a little old again. I'm recollecting discussions from 30 years ago when Dr. Herget recollected about events 20 years before that. Sputnik was young then and so was I. Sputnik's launch has had its 50th anniversary and I'm past mine.

But, you know what? Sputnik is not up there anymore. And I'm still here. Still watching the skies. Feeling young! Pfffffftt!

Clear skies to all sky watchers!

The November FOTO Meeting

Thursday, November 1st
7:30 PM

By Dave Bosse

The elections of FOTO officers dominated activities at the October general meeting of the Friends of the Observatory, but we did have time for a Mini-Member Night. Rick Hunter, our resident E-M radiation expert, gave us a great overview of the Gamma-ray Large Area Space Telescope. This gadget is really going to teach us something when it comes online.

The November program promises to be most interesting as we have **Dr. Nick Abel** from the University of Cincinnati presenting. He will be giving us some details of dust effects in the Orion Nebula region, why things look the they way they do. The Orion region is quite complicated and I can't wait to learn more about it from Dr. Nick.

Why not join us for a light dinner before the general FOTO meeting. There is a small group that meets at 6:00-ish at Panera Bread in the Hyde Park Plaza before the short trip over to the Observatory for the general meeting. We have Panera's meeting room reserved at 6:00 P.M. and there is always plenty of room. You have to eat sometime, why not sup amongst Friends (of the Observatory)?

FOTO Election Results

By John Ventre
Nomination Committee Chair

The following officers were elected at the FOTO Election Meeting October 4.

President - **Dave Bosse**
V.P.- **Rebecca Shundich**
Secretary - **Linda Magee**
Treasurer - **Joanne Pedersen**

Did You Know….

Neptune gets only 1/900th of the sunlight that Earth receives.

FOTO Planning Meeting

By Dave Bosse

The next FOTO planning meeting will be at the Hyde Park Tavern and Grille on **Tuesday, November 20th at 6:00 P.M**. All members of FOTO are invited and encouraged to attend. The meetings are certainly as entertaining as any reality show you've watched on TV. Come on out and help support the only 19th century Observatory in town. The discussions remain mostly astronomical, but we have been known to wander. The company can't be beat and the food is not too bad either. See you there!

Welcome New FOTO and COC Members!

Diana Batsch
John & Doris Blades
Mike & Lisa Debbeler
Judi Dooley
Ernst Grossman
Jeff & Reda Hutton
Majorie Kuck
Greg Lockwood
Eric Matt
Dieter Moeller
David & Jean Patterson
Margaret Possert
Terry Powell
Gerald Ragland
Dorothy Schulz
Rebecca Shundich
Curt Spear
Murray & Amy Wilson

Craig's Corner

By Craig Niemi, COC Executive Director

The Observatory's educational program takes a great step forward!

We're thrilled to welcome **Dr. Roger Burgess** to the Observatory family. Dr. Burgess comes to us from Walnut Hills High School and will be primarily working with Dean to expand our already terrific Middle and High School programs.

"Doc. B" holds Master's degree in Physics, a Ph.D. in Astronomy and has taught at Walnut Hills for nearly 20 years. As our new part-time educator, Dr. Burgess will teach a variety of astronomy topics, lead field trips at the Observatory, and give in-school programs. Dr. Burgess will also build our contact list of schools and educators by contacting science teachers and department chairs, and through the Education Committee work on curriculum development. Other duties will include outreach to scouts and the general community. The Observatory has become the foremost astronomy education center in Cincinnati and with Dr. Burgess on-board our reputation locally, regionally and eventually nationally, can only be strengthened.

Hope you'll stop by and give "Doc B" a warm welcome to the "O"!
Craig

FOTOKids Meeting

Next Meeting: Friday, November 2nd, at 7:30 PM.

Mars Mania is coming. The Red Planet will soon be back in the evening skies and Outreach Astronomer **Dean Regas** wants to get you prepared. He will share all the latest pictures and news about Mars so you can be ready to see it for yourself in December. Dean also recommends that you bring your binoculars along to try and find the Seven Sisters in the sky. Please note that the start time is 7:30. December, January, and February meetings will be at 7:00 PM after the time goes back to EST.

If you have any questions please call Dean Regas at 513-321-5186.

Humanities at The Observatory

"The Patrons and the Poltroons: The Visionaries and Adversaries of Cincinnati's Quest for a Public University"

by Greg Hand

November 13, 2007, 7:30 PM

$10, $5 students,
Free for Observatory Members
RESERVATIONS SUGGESTED

Greg Hand is the Associate Vice President for Public Relations at the University of Cincinnati. His talk explores the colorful characters who contributed to the creation of Cincinnati's university, as well as the rogues who made that early history so interesting.

The University of Cincinnati traces its origins to 1819, the year in which Cincinnati College and the Medical College of Ohio were chartered. In 1870, the City of Cincinnati established the University of Cincinnati. The Cincinnati Observatory was incorporated into the university in 1873 and the first Ph.D. awarded by UC was in Astronomy.

Cincinnatians launched the first effort to build a university in 1795. The 75-year path to UC's eventual founding in 1870 twists through bank failures, secret societies, gambling, political riots, war, pestilence, corruption, a tornado, and, of course, lots of pigs. "The Patrons and the Poltroons" will explore the on-again-off-again efforts of Cincinnati to create a municipal university. Many of the pioneer city's leading citizens lent their influence to the project, and several colorful opportunists found easy pickings in a city determined to succeed. It's a tale punctuated by fisticuffs, feuds and yellow journalism. For 19th-Century Cincinnati, a university symbolized civic accomplishment and the citizens involved in creating the university also created many of our treasured civic institutions.

Mr. Hand has been associated with the University of Cincinnati since 1978 in various capacities, including editor of the faculty/staff newspaper, science writer, news bureau manager, university spokesperson and public relations instructor. He is a 1974 graduate of the university's McMicken College of Arts & Sciences. Before his employment by the University of Cincinnati, Mr. Hand was a reporter and editor for several weekly newspapers, including the Western Hills Press in Cincinnati. He is co-author, with Kevin Grace, of *The University of Cincinnati*, a pictorial history of the university, and *Bearcats! The Story of Basketball at the University of Cincinnati*.

For information and reservations, call: 513-321-5186.

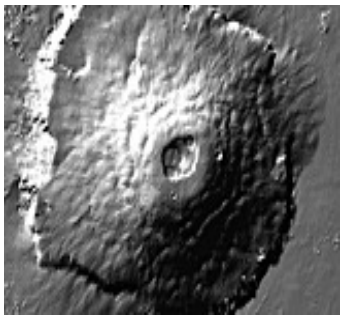
November's Trivia Question

By Greg Huber

Name the 5 Spacecraft that are currently on a path to exit the solar system.

October's Question
In about 140AD Ptolomy published a book that became the astronomy standard for about 1,000 years. Name the text.
The Answer
In 140 AD Ptolomy wrote the Almagest which became the standard astronomy text for almost 1000 years.

Martian Volcanoes May NOT be Extinct



New research on Hawaiian volcanoes, combined with satellite imagery of Mars, suggests that three Martian volcanoes may only be dormant—not extinct. Instead of Mars' crust moving over stationary magma "hot spots," as occurs on Earth, researchers think the plumes travel.
http://www.space.com/scienceastronomy/071017-mars-magma

The Constellation Sagittarius

This region represents a birthing place for stars and shows a snapshot of the evolution cycle of matter in galaxies.

The nebulae will eventually condense into star formation regions. Millions of years from now newborn stars will have blown their initial envelope of gas back into the void. Eventually, the cluster will dissolve and each star will find a path into the arms of the galaxy to mingle with older generations of stars.

The overall image (slightly larger than shown here) represents just one square degree of sky, meaning four full moons could fit within its frame.

Be a Sidewalk Astronomer

We're looking for amateur astronomers to take their telescopes to the streets. A program which began in San Francisco under our dear friend John Dobson, called Sidewalk Astronomy, has taken hold in Cincinnati.

Members **Scott Gainey, John Coff, Scott Naylor, Fred Calvert** and others have taken their telescopes to where people are at night - and they had a ton of fun showing unsuspecting people the Moon and planets. In September **Dean Regas** tried his hand at it on Fountain Square. Equipped with the scope and H-Alpha filter, he and member **Diana Batch** showed the Sun to the folks on their lunch hour. Dean loved the experience and that night took a scope to Newport on the Levee and wowed the passers-by with close-up views of the Moon.

– continued-

-continued- If you would like to find out more about this group, or would like to assist or join, please call **Dean Regas** at 513-321-5186. Even if you don't have a telescope, he can set you up to bring scopes to the people.

Early Computers I Came to Know and Love

By John Ventre

FOTO/COC members are invited to attend a fascinating presentation "Early Computers that I Came to Know and Love" by Dr. Everett C. Yowell. The program will be offered on Monday, November 5, 4:30-5:30 p.m. at UC's College of Applied Science, Auditorium, 2220 Victory Parkway, near Eden Park. Parking is free in the "B" and "C" spots after 4:00 PM. A reception will be held at 4:00 PM in an area next to the Auditorium. For more information contact Russ McMahon at russ.mcmahon@uc.edu.

Dr. Yowell, a FOTO/COC member, holds a Ph.D. in Astronomy and is the son of Everett I. Yowell, the director of the Cincinnati Observatory during the 1930s. Dr. Yowell will discuss the early days of computing and computers including his experience in coding the BINAC (the first dual processor computer) and later the SWAC (the first computer to use CRT storage).

New COC Logo Required

By John Ventre

FOTO and COC members are encouraged to submit their proposed design for a new COC logo (logogram). The new logo will supplement the current one for those instances where a logo devoid of excessive detail is required, such as a logo on a shirt or hat. Use your best judgment and creativity. Submissions are requested to be received at the Observatory no later than October 31.

The submissions will be submitted to the COC Board for consideration at their November 7th meeting. Contact John Ventre 513-321-5186 extension 4 or jeventre@ix.netcom.com for additional details, guidelines, background material and relevant criteria.

Makeup of Potentially Threatening Asteroid Determined

The mineral composition of a near-Earth asteroid with a slight chance of striking our planet in 2036 has been determined for the first time.

By analyzing sunlight reflected off its surface, scientists say the asteroid Apophis is a "good match" for a rare type of stony meteorite known as a type LL chondrite. This group of space rocks represents just 7 percent of the known meteorites that fall to Earth.

Apophis is currently about 158 million miles from Earth and will not be visible again for several years. On Apr. 13, 2029, it will pass within 22,000 miles of Earth, but there is a small possibility—about one chance in 45,000—that it could be on a collision course with our planet when it comes by again in 2036.

http://www.space.com/scienceastronomy/071015-apophis-makeup.html

Video Crew "Shoots" the Observatory

By John Ventre

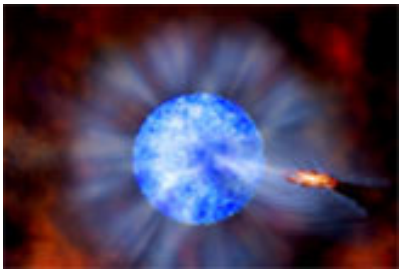
A crew from the Interstellar Studios recently spent a day at the Observatory capturing some footage which potentially will be used in a two hour PBS special "400 years of the Telescope."

The special production, which is scheduled to air in 2009, will trace the history of the telescope since 1609 when Galileo first turned a telescope to the skies. It will be broadcast around the world in most of the world's major languages. The video crew is currently spending four months visiting all of the major observatories around the world and other sites of special interest.

Monster Black Hole Busts Theory

A stellar black hole much more massive than theory predicts is possible has astronomers puzzled.

Stellar black holes form when stars with masses around 20 times that of the sun collapse under the weight of their own gravity at the ends of their lives. Most stellar black holes weigh in at around 10 solar masses when the smoke blows away, and computer models of star evolution have difficulty producing black holes more massive than this.



The newly weighed black hole is 16 solar masses. It orbits a companion star in the spiral galaxy Messier 33, located 2.7 million light-years from Earth. Together they make up the system known as M33 X-7.

"We're having trouble using standard theories to explain this system because it is so massive," study team member Jerome Orosz of the University of California, San Diego, told *SPACE.COM*.

http://www.space.com/scienceastronomy/071017-monster-bhole.html

Mars Rovers Given the **Green** Light

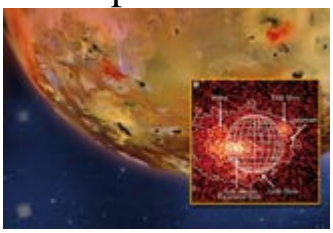
It's a go! NASA has extended the activities of the Mars Exploration Rovers Spirit and Opportunity for a fifth time.

The decision could keep the robotic Martian explorers active through 2009.

Did You Know….

"Long period" comets visit our solar system once in thousands or millions of years or just once and then they are gone forever. "Short period" comets swing by every few decades or centuries.

Mystery of Io's Atmosphere Solved



Jupiter's volcanic moon Io is veiled by a thin atmosphere, but how much its volcanoes and chunks of frozen gas contribute to its atmosphere has puzzled scientists for decades.

The New Horizons spacecraft recently documented the moon's glowing aurora, however, giving researchers a chance to solve the atmospheric mystery.

Io is the most volcanically active object in the solar system. The moon's pockmarked and colorful appearance is not unlike a pepperoni pizza.

Io is volcanically active, and that volcanism ultimately is the source material for Io's sulfur-dioxide atmosphere. But the relative contributions of volcanic plumes and sublimation of frosts deposited near the plumes have remained a question for almost 30 years.

Io's volcanoes spew out sulfur dioxide, which is a gas that stinks of freshly lit matches and almost entirely makes up the moon's atmosphere. As Io rotates from daylight into darkness, chilling the yellowish rock down to -226 F (-143 C), the gas freezes into a solid, much like dry ice (frozen carbon dioxide gas).

"The atmosphere at that point collapses down so that all that is left supplying the atmosphere are the volcanoes," Retherford said.

Because Io's volcanic gas stays warm enough not to freeze and creates glowing auroras, scientists were able to find out how much the volcanoes supply Io's atmosphere by measuring the moon's night side aurora.

About 1 to 3 percent of Io's dayside atmosphere, it turns out, is created by the volcanoes. The rest is generated from frozen sulfur dioxide turning directly into gas which, over eons, has accumulated on Io's surface.
http://www.space.com/scienceastronomy/071015-mm-io-atmosphere.html

The Word of the Month

By Greg Huber

"Sothic Cycle"

October's Word: "Oljato"

The Answer

Oljato is an asteroid in the Apollo group, it was discovered in 1947, but was lost until 1979. It is unique because it has a reflectance spectrum like no other asteroid!

The Crab Nebula shows six-light-year-wide expanding remnants of a star's supernova explosion.

Stonelick Lake Star Parties

By Scott Naylor

Our next Star Party will be held on **Saturday, November 3rd,** with a rain date the next Saturday, November 10th.

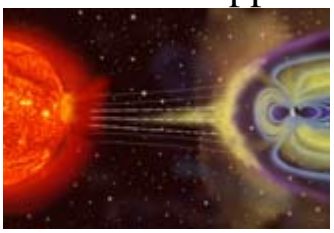
For directions or for more information phone **Scott Naylor at** 513-575-5556.

Strong Volunteers Needed on FOTO Meeting Night

By John Ventre

Several strong volunteers are needed to help position some large and heavy wooden bookcases in the Observatory's basement. The "event" will take place prior to the FOTO meeting on Thursday, November 1, 7:30 p.m.

Near-Earth Space Bubbles Mapped



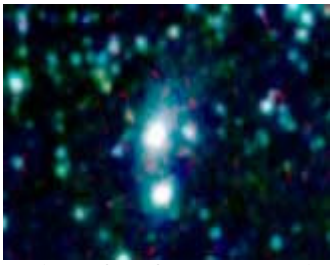
Enormous bubbles of plasma trapped within Earth's magnetic fields have been fully mapped for the first time.

Scientists now think the bubbles of ionized gas, called convection cells, are strongly affected by pummeling from the sun's solar wind. Future observations of the cells could be used to monitor violent solar outbursts, such as solar flares and coronal mass ejections, which can harm satellites or astronauts in space.
http://www.space.com/scienceastronomy/071023-st-sun-earth-connection.html

Did You Know….

There are 1-2 MILLION chucks of space rocks out there whose orbits may pass within 30 million miles of Earth.

Old Galaxy Finds Fountain of Youth



In a galaxy far, far away, a theft of cosmic proportions is taking place in an effort to claim the fountain of youth.

A massive galaxy is stealing a billion suns worth of gas from a smaller galactic neighbor. In space, gas is a hot commodity. Really hot. In this case, about 1,340 degrees Fahrenheit (730 degrees Celsius). And it's great for making new stars.

We may be viewing the larger galaxy in a rare brief stage of its reincarnation from an old galaxy to a youthful one.
http://www.space.com/scienceastronomy/071022-galaxy-gas.html

Hundreds of 'Missing' Black Holes Found

Hundreds of "missing" black holes have been found lurking in dusty galaxies billions of light-years away.

"Active, supermassive black holes were everywhere in the early universe," said study team member Mark Dickinson of the National Optical Astronomy Observatory in Tucson, Ariz. "We had seen the tip of the iceberg before in our search for these objects. Now, we can see the iceberg itself."

The finding, detailed in two studies published in the Nov. 10th issue of *Astrophysical Journal*, is the first direct evidence that most, if not all, massive galaxies in the distant universe spent their youths constructing supermassive black holes at their cores.

It could also help answer fundamental questions about how massive galaxies such as our Milky Way evolved.

"It's as if we were blindfolded studying the elephant before, and we weren't sure what kind of animal we had," said study team member David Elbaz of the Commissariat a l'Energie Atomique in France.

Using NASA's Chandra X-ray and Spitzer Space Telescopes, the team detected unusually high levels of infrared light emitted by 200 galaxies in the distant universe. They think the infrared light was created by material falling into "quasars"—supermassive black holes surrounded by doughnut-shaped clouds of gas and dust—at the center of the galaxies.

The new quasar-containing galaxies are all about the same mass as our Milky Way, but are irregular in shape. They are located 9 billion to 11 billion light-years away and existed at a time when the universe was in its adolescence and between 2.5 and 4.5 billion years old.

http://www.space.com/scienceastronomy/071025-missing-bholes.htm

Obscure Comet Brightens Suddenly

UPDATE 10/26/07: *The comet has brightened even further. [Click here for latest update].*

A small and very faint comet has surprised observers around the world by overnight becoming bright enough to see with the unaided eye.

Comet Holmes, which was discovered in November 1892 by Edwin Holmes, in London England, was no brighter than magnitude 17 in mid-October—that's about 25,000 times fainter than the faintest star that can normally be seen without any optical aid. In order to view an object this faint, one would need a moderately large telescope.

But the comet's brightness has suddenly rocketed all the way up to 3rd-magnitude, brightening nearly 400,000-times in less than 24-hours! On this astronomers scale, smaller numbers mean brighter objects. From urban locations, a 3rd-magnitude object might be hidden by light pollution, but under rural skies it would be clearly visible.

http://www.space.com/spacewatch/071025-comet-holmes.html

http://www.astronomynow.com/news/071025holmes/

Chinese Launch Spacecraft To Explore The Moon

China's burgeoning space program achieved another historic milestone during Wednesday's successful launch of the nation's first deep space probe on a one-year mission to study the moon from lunar orbit. The first images of the moon should arrive back on Earth by the end of November, Xinhua reported.

http://spaceflightnow.com/news/n0710/24chinamoon/

Did You Know…..

When it snows on Jupiter's moon Io, the snow smells like sulphur.

Dawn leaves Earth

NASA's Dawn space probe launched Thursday, October 25th aboard a Delta 2-Heavy rocket from Cape Canaveral to explore two worlds in the asteroid belt.

http://www.spaceflightnowplus.com/index.php?k=dawn&s=date&t=NASA's+Dawn+probe

Now You Can Help Scientists Understand the Universe

A new distributed computing project allows people around the world to participate in cutting-edge cosmology research by sharing their unused computing cycles.

Designed by an astronomy professor, Cosmology@Home is similar to SETI@Home, the popular software program that searches radio telescope data for evidence of extraterrestrial transmissions.

When you run Cosmology@Home on your computer, it uses part of the computer's processing power, disk space and network bandwidth,. Our goal is to search for cosmological models that describe our universe and agree with available astronomical and particle physics data.

To accomplish this, participating computers will calculate predictions made by millions of theoretical models with different parameters. The predictions are then compared with data, which include fluctuations in the cosmic microwave background, large-scale distributions of galaxies and the universe's acceleration.

http://www.space.com/businesstechnology/071024-home-cosmology.html